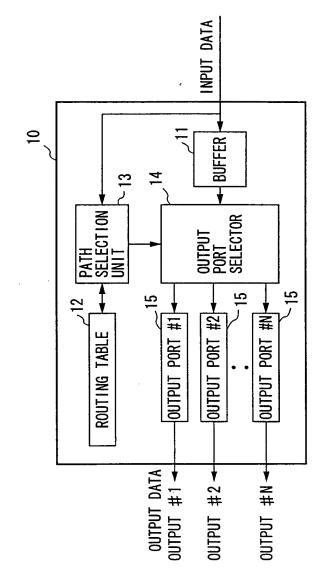
FIG

water M.



٩ FIG.2 ISP-A DATA TRANSMISSION DEVICE

a

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INTERNET

ਰ

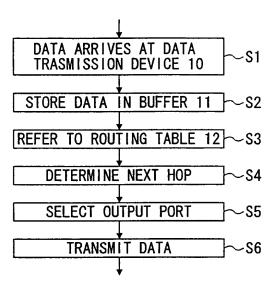
ISP-B

ပ

в

	PRIORITY ROUTE	*	*	*	*	
	OUTPUT PORT	ŀ	2	1	-	2
	NEXT HOP	а	. C	а	а	ပ
	HOST/NET	NET	NET	HOST	NET	
<u>7</u>	DESTINATION	ISP-A	ISP-B	X	INTERNET	

FIG.3



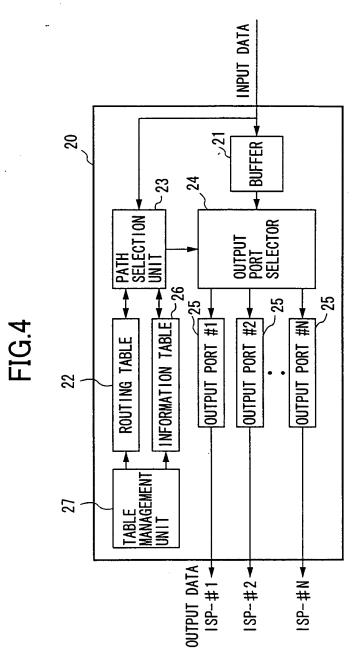


FIG.5A

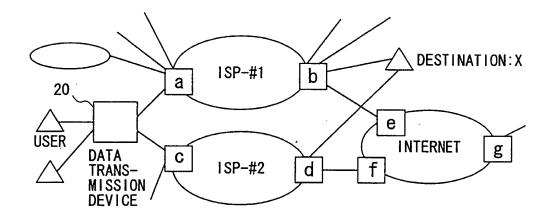


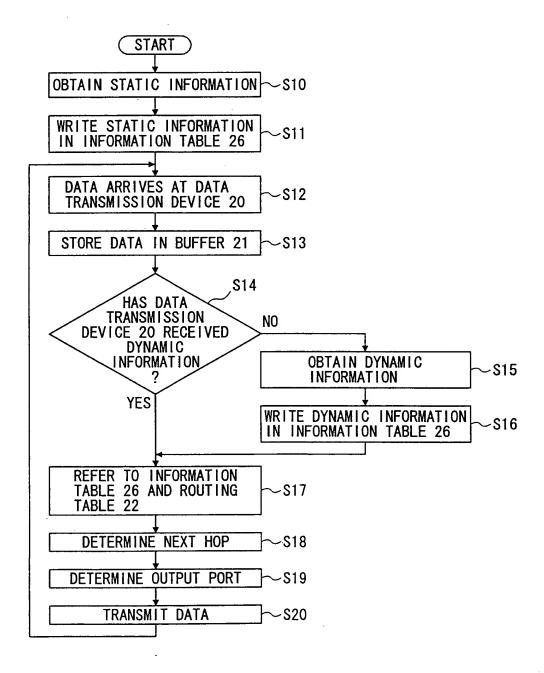
FIG.5B

DESTINATION	HOST/NET	NEXT HOP	OUTPUT PORT	MOST APPROPRIATE ROUTE
I SP-#1	NET	а	1 -	-
ISP-#2	NET	С	2	
Х	HOST	а	1	*
		С	2	
INTERNET	NET	а	1	*
		С	2	

FIG.5C

DESTINATION	"VIA" NETWORK	MESSAGE-PACKET RETURN PERIOD	FEE INFORMATION
Х	ISP-#1	2	1
	ISP-#2	10	1

FIG.6



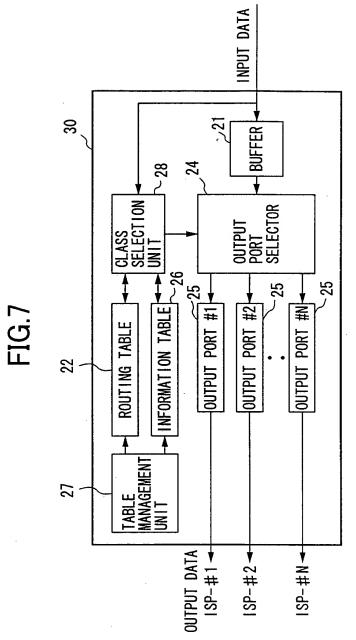


FIG.8A

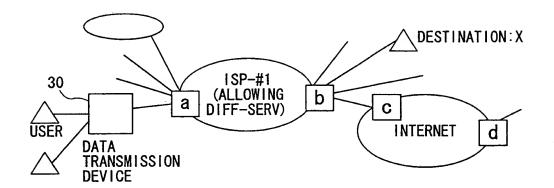


FIG.8B

						·		
PROPRIATE UTE	FEE	*			*			*
MOST APP RO	SPEED	*		*		*		
OUTPUT PORT SERVICE CLASS MOST APPROPRIATE ROUTE			EF-PHB	AF-PHB	BEST EFFORT	8HJ-13	AF-PHB	BEST EFFORT
OUTPUT PORT		l				-		
NEXT HOP		В	В			B		
HOST/NET		NET	HOST			NET		
DESTINATION		ISP-#1	×			INTERNET		

FIG.8C

DESTINATION	SERVICE CLASS	SERVICE CLASS RETURN PERIOD	FEE INFORMATION	VALUE FOR SPEED AS FIRST PRIORITY	VALUE FOR FEE AS FIRST PRIORITY
×	EF-PHB	-	20	22. 1	46. 4
	AF-PHB	4	10	20.9	27. 4
	BEST EFFORT	20	1	57.0	26. 2

FIG.9

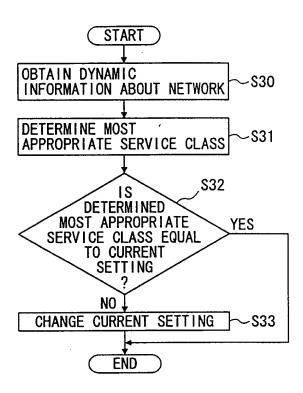


FIG.10A

111								
'ROPRIATE UTE	FEE	*			*			*
MOST APP RO	SPEED	*	*			*		
OUTPUT PORT SERVICE CLASS MOST APPROPRIATE ROUTE			EF-PHB	AF-PHB	BEST EFFORT	EF-PHB	AF-PHB	BEST EFFORT
OUTPUT PORT		1	-			_		
NEXT HOP		а	а			B		
HOST/NET		NET	HOST			NET		
DESTINATION		1SP-#1	×			INTERNET		

FIG.10B

46. 0 30. 9	21.3	10	20	EF-PHB AF-PHB
IST FEE AS FIRST PRIORITY	SPEED AS FIRST PRIORITY	FEE INFORMATION	SERVICE CLASS RETURN PERIOD	SERVICE CLASS

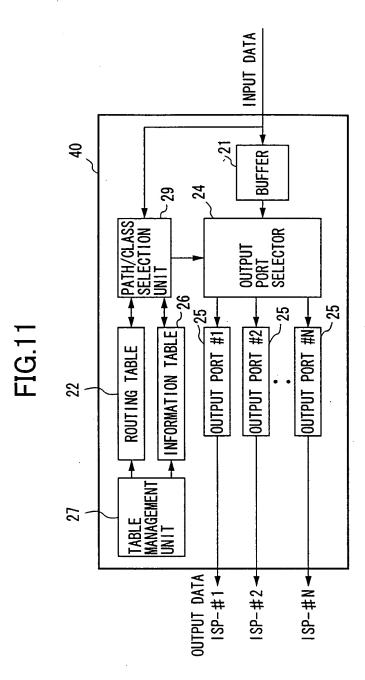


FIG.12A

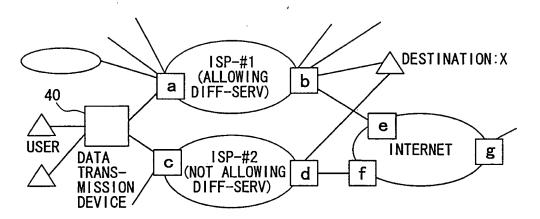


FIG.12B

ROPRIATE UTE	FEE	*	*				*				*
MOST APP ROI	SPEED	*	*		*				*		
OUTPUT PORT SERVICE CLASS MOST APPROPRIATE ROUTE		1	1	SHd-13	AF-PHB	BEST EFFORT	BEST EFFORT	EF-PHB	AF-PHB	BEST EFFORT	BEST EFFORT
OUTPUT PORT			2	1			2	ļ			2
NEXT HOP		В	0	В			S	В			C
HOST/NET		NET	NET	HOST				NET			
DESTINATION		1SP-#1	1SP-#2	×				INTERNET			

FIG.12C

VALUE FOR FEE AS FIRST PRIORITY	43. 3	24. 6	19.3	12.8
VALUE FOR VALUE FOR SPEED AS FIRST PRIORITY	20. 2	1.71	40.9	21.8
FEE INFORMATION	20	10	-	2
NETWORK SERVICE CLASS RETURN PERIOD INFORMATION	1	7	20	10
SERVICE CLASS	EF-PHB	AF-PHB	BEST EFFORT	(BEST EFFORT)
Α"	1#-dS1			7#-dS1
DESTINATION "VI	X			

FIG.13A

ROPRIATE JTE	FEE	*	*				*				*
MOST APP Rol	SPEED	*	*				*				*
OUTPUT PORT SERVICE CLASS MOST APPROPRIATE ROUTE		-	-	8Hd-43	AF-PHB	BEST EFFORT	BEST EFFORT	BH4-43	AF-PHB	BEST EFFORT	BEST EFFORT
OUTPUT PORT		1	2	1			2	-			2
NEXT HOP		B	ပ	B		_	ပ	B			ပ
HOST/NET		NET	NET	HOST				NET			
DESTINATION		1SP-#1	1SP-#2	×				INTERNET			

FIG.13B

DESTINATION ".	,I A″	SERVICE CLASS	NETWORK SERVICE CLASS RETURN PERIOD INFORMATION SPEED AS FIRST FEE AS FIRST PRIORITY	FEE	VALUE FOR SPEED AS FIRST PRIORITY	VALUE FOR FEE AS FIRST PRIORITY
×	ISP-#1	EF-PH8	2	20	20.3	43. 3
		AF-PHB	10	10	19. 5	25. 7
	<u> </u>	BEST EFFORT	40	1	42. <i>7</i>	20.0
	1SP-#2	(BEST EFFORT)	15	2	17.5	11.0

FIG.14

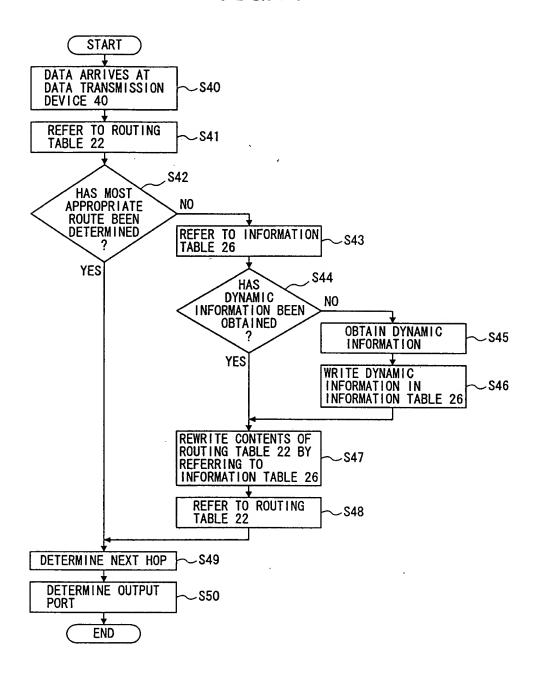


FIG.15

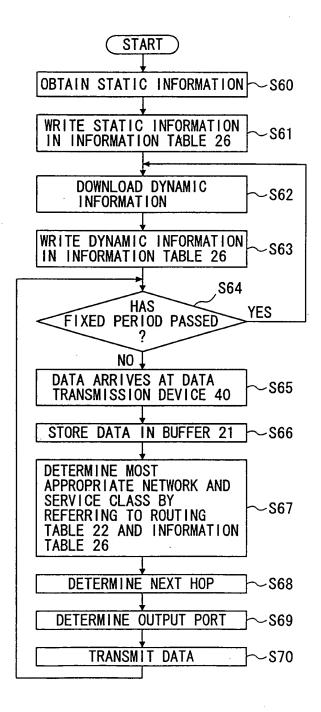


FIG.16

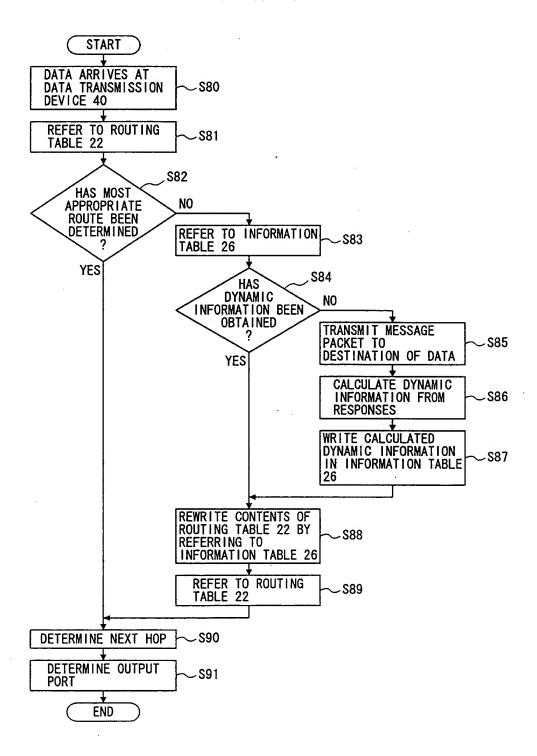


FIG.17A

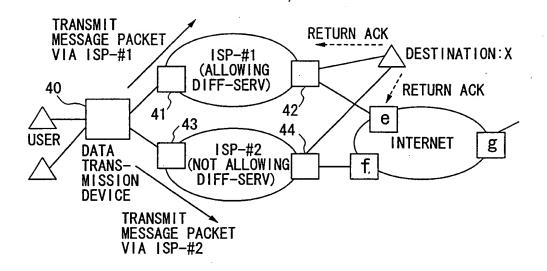


FIG.17B

	_			
FEE INFORMATION	70	10	-	2
DATA TRANSMISSION TIME	00:00:19:894	00:00:28:183	00:00:58:564	00:00:43:173
NETWORK SERVICE CLASS TRANSMISSION RECEPTION TIME	19:03:41:347 19:04:01:241 00:00:19:894	19:04:09:530	19:04:39:911	19:03:41:347 19:04:24:520 00:00:43:173
MESSAGE-PACKET TRANSMISSION TIME	19:03:41:347	19:03:41:347	19:03:41:347	19:03:41:347
SERVICE CLASS	8Hd-43	AF-PHB	BEST EFFORT	BEST EFFORT
"VIA" NETWORK	18P-#1			1SP-#2
DESTINATION	×			

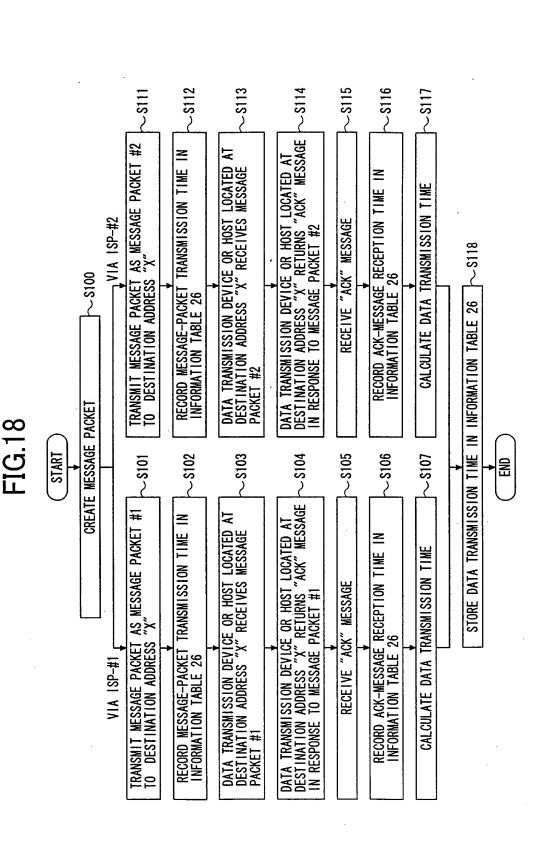


FIG.19A

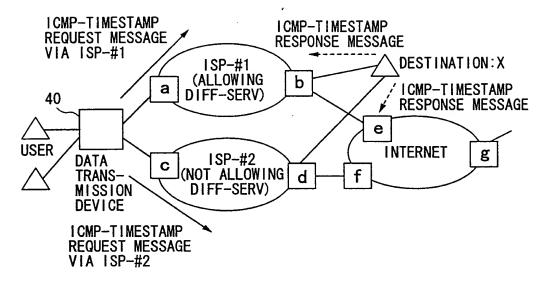


FIG.19B

PACKET LENGTH	FRAGMENT OFFSET	HEADER CHECKSUM			PADDING	CHECKSUM	SEQUENCE NUMBER			
	FLAG		ADDRESS	IP ADDRESS				TIMESTAMP)	IMESTAMP)	'IMESTAMP)
S01	ICATION	$PROTOCOL\ TYPE = 01$	SOURCE IP ADDRESS	DESTINATION IP ADDRESS	OPTION	CODE (ALWAYS 0)	IDENTIFIER	(ORIGINATE TIMESTAMP)	(RECEIVE TIMESTAMP)	(TRANSMIT TIMESTAMP)
VERSION HEADER LENGTH	IDENTIFICATION	111				ICMP TYPE = 0D/0E	IDENT			

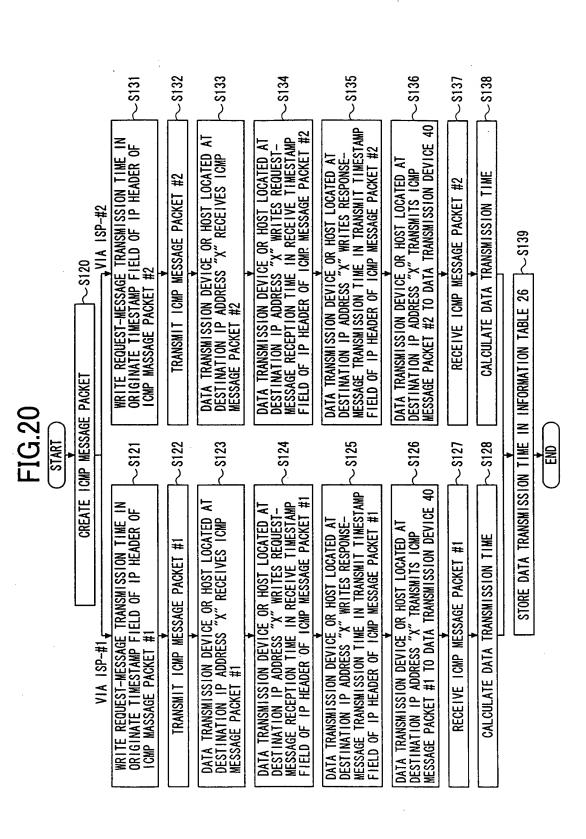


FIG. 21

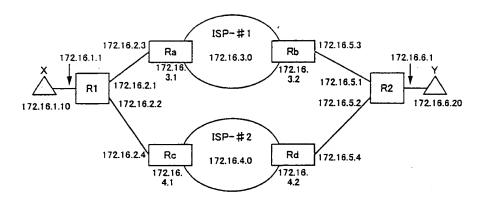


FIG.22A

DESTINATION	"VIA" NETWORK	MESSAGE-PACKET RETURN PERIOD	FEE INFORMATION
172. 16. 2. 20	ISP-#1	_	. 1
	ISP-#2	_	1

FIG.22B

DESTINATION IP ADDRESS	HOST/NET	NEXT HOP	OUTPUT PORT	MOST APPROPRIATE ROUTE
172. 16. 1. 10	HOST	_	1	*
172. 16. 2. 3		_	2	*
172. 16. 2. 4		· -	3	*
172. 16. 3. 0/24	NET	172. 16. 2. 3	2	*
172. 16. 4. 0/24	NET	172. 16. 2. 4	3	*
172. 16. 5. 0/24	NET	172. 16. 2. 3	2	
		172. 16. 2. 4	3	
172. 16. 6. 0/24	NET	172. 16. 2. 3	2	
		172. 16. 2. 4	3	

FIG.23A

PACKET LENGTH	FRAGMENT OFFSET	HEADER CHECKSUM			ADDRESS 1 =	ADDRESS 2 =	ADDRESS 3 =	PADDING	CHECKSUM	SEQUENCE NUMBER $= 0000$			
/d	FLAG	· H	= 172, 16, 2, 1	DESTINATION IP ADDRESS = $172.16.6.20$	POINTER		:			SEQUEN	ORIGINATE TIMESTAMP = 19:03:41:347	(RECEIVE TIMESTAMP)	(TRANSMIT TIMESTAMP)
108	CATION	PROTOCOL TYPE = 01	SOURCE IP ADDRESS = 172, 16, 2, 1	DESTINATION IP ADD	OPTION LENGTH	172, 16, 2, 1 (R1)	172. 16. 3. 1 (Ra)	172. 16. 6. 20 (HOST Y)	CODE (ALWAYS 0)	R = DEAD	ORIGINATE TIMESTA	(RECEIVE	(TRANSMIT
VERSION HEADER LENGTH	IDENTIFICATION	111			OPTION TYPE = 10000011				ICMP TYPE = 0D	IDENTIFIER = DEAD			

FIG.23B

PACKET LENGTH	FRAGMENT OFFSET	HEADER CHECKSUM			ADDRESS 1 =	ADDRESS 2 =	ADDRESS 3 =	PADDING	CHECKSUM	SEQUENCE NUMBER = 0000			
PACKET	FLAG FR/	HEADER	= 172, 16, 2, 1	ESS = 172, 16, 6, 20	POINTER				岩	SEQUENCE NI	MP = 19:03:41:347	I MESTAMP)	[IMESTAMP)
108	CATION	PROTOCOL TYPE = 01	SOURCE IP ADDRESS = 172, 16, 2, 1	DESTINATION IP ADDRESS = 172, 16, 6, 20	OPTION LENGTH	172. 16. 2. 1 (R1)	172, 16, 4, 1 (Rc)	172. 16. 6. 20 (HOST Y)	CODE (ALWAYS 0)	R = DEAE	ORIGINATE TIMESTAMP = 19:03:41:347	(RECEIVE TIMESTAMP)	(TRANSMIT TIMESTAMP)
VERSION HEADER LENGTH	IDENTIFICATION	Ш			OPTION TYPE = 10000011				ICMP TYPE = 0D	IDENTIFIER = DEAE			

FIG.24A

DESTINATION	HOST/NET	NEXT HOP	OUTPUT PORT	MOST APPROPRIATE ROUTE
172. 16. 1. 0/24	NET	172. 16. 2. 1	1	*
172. 16. 2. 0/24	NET	_	1	*
172. 16. 3. 0/24	NET	_	2	*
172. 16. 4. 0/24	NET	172. 16. 2. 1	2	*
172. 16. 5. 0/24	NET	172. 16. 3. 2	2	*
172. 16. 6. 0/24	NET	172. 16. 3. 2	2	*

FIG.24B

DESTINATION	HOST/NET	NEXT HOP	OUTPUT PORT	MOST APPROPRIATE ROUTE
172. 16. 1. 0/24	NET	172. 16. 3. 1	1	*
172. 16. 2. 0/24		172. 16. 3. 1	1	*
172. 16. 3. 0/24	NET	_	1	*
172. 16. 4. 0/24	NET	172. 16. 5. 1	2	*
172. 16. 5. 0/24	NET	_	2	*
172. 16. 6. 0/24	NET	172. 16. 5. 1	2	*

FIG.24C

DESTINATION	HOST/NET	NEXT HOP	OUTPUT PORT	MOST APPROPRIATE ROUTE
172. 16. 1. 0/24	NET	172. 16. 5. 3	1	*
		172. 16. 5. 4	2	,
172. 16. 2. 0/24	NET	172. 16. 5. 3	1	*
		172. 16. 5. 4	2	
172. 16. 3. 0/24	NET	172. 16. 5. 3	1	*
172. 16. 4. 0/24	NET	172. 16. 5. 4	2	*
172. 16. 5. 0/24	NET	-	1	*
172 16 6 20	TPOH	_	3	*

FIG.25A

PACKET LENGTH	FLAG FRAGMENT OFFSET	HEADER CHECKSUM	172. 16. 6. 20	SS = 172. 16. 2. 1	CHECKSUM	SEQUENCE NUMBER = 0000	ORIGINATE TIMESTAMP = 19:03:41:347	RECEIVE TIMESTAMP = 19:04:01:241	FRANSMIT TIMESTAMP = $19:04:01:583$
VERSION HEADER LENGTH TOS		TTL PR0T0C0L TYPE = 01	SOURCE IP ADDRESS = 172, 16, 6, 20	DESTINATION IP ADDRESS = 172.16.2.1	ICMP TYPE = 0E CODE (ALWAYS 0)	IDENTIFIER = DEAD	ORIGINATE TIMEST	RECEIVE TIMESTAN	TRANSMIT TIMESTA

FIG.25B

DESTINATION	"VIA" NETWORK	MESSAGE-PACKET RETURN PERIOD	FEE INFORMATION
Y	ISP-#1	00:00:19:894	1
	ISP-#2	00:00:28:183	1

FIG.25C

DESTINATION	HOST/NET	NEXT HOP	OUTPUT PORT	MOST APPROPRIATE ROUTE
172. 16. 1. 10	HOST	-	1	*
172. 16. 2. 3			2	*
172. 16. 2. 4		-	3	*
172. 16. 3. 0/24	NET	172. 16. 2. 3	2	*
172. 16. 4. 0/24	NET	172, 16, 2, 4	3	*
172. 16. 5. 0/24	NET	172. 16. 2. 3	2	*
		172. 16. 2. 4	3	
172. 16. 6. 0/24	NET	172. 16. 2. 3	2	*
		172. 16. 2. 4	3	

FIG.26

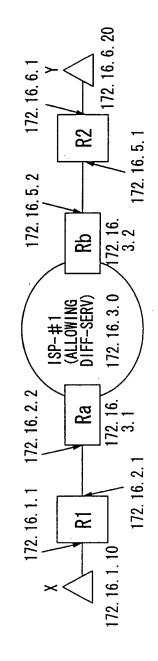


FIG.27A

SER	SERVICE CLASS	CLASS MESSAGE-PACKET RETURN PERIOD	FEE INFORMATION	VALUE FOR SPEED AS FIRST PRIORITY	VALUE FOR FEE AS FIRST PRIORITY
EF-PHB		1	10		
AF-PHB		1	2		
BEST EFFORT	7	1	1		

FIG.27B

											·
SERVICE CLASS MOST APPROPRIATE ROUTE	*	*									
SERVICE CLASS	1	ı	EF-PHB	AF-PHB	BEST EFFORT	EF-PHB	AF-PHB	BEST EFFORT	EF-PHB	AF-PHB	BEST EFFORT
OUTPUT PORT	-	2	. 2			2			2		
NEXT HOP	ı	1	172. 16. 2. 2			172, 16, 2, 2			172, 16, 2, 2		
HOST/NET	HOST	NET	NET			NET			NET		
DESTINATION	172, 16, 1, 10	172. 16. 2. 0/24	172. 16. 3. 0/24			172, 16, 5, 0/24			172. 16. 6. 0/24		

FIG.28A

PACKET LENGTH	FRAGMENT OFFSET	HEADER CHECKSUM	. 2. 1	72. 16. 6. 20	CHECKSUM	SEQUENCE NUMBER = 0000	9:03:41:347	(MP)	AMP)
	FLAG		172. 16	SS = 1			MP = 1	INEST/	TIMEST,
VERSION HEADER LENGTH EF-PHB	IDENTIFICATION	TTL PR010C0L TYPE = 01	SOURCE IP ADDRESS = 172.16.2.1	DESTINATION IP ADDRESS = 172, 16, 6, 20	CMP TYPE = 0D	IDENTIFIER = DEAD	ORIGINATE TIMESTAMP = 19:03:41:347	(RECEIVE TIMESTAMP)	(TRANSMIT TIMESTAMP)

FIG.28B

PACKET LENGTH	FLAG FRAGMENT OFFSET	HEADER CHECKSUM	172. 16. 2. 1	ESS = 172. 16. 6. 20	CHECKSUM	SEQUENCE NUMBER = 0000	IP = 19:03:41:347	IMESTAMP)	(IMESTAMP)
EADER LENGTH AF-PHB	IDENTIFICATION	TL PROTOCOL TYPE = 01	SOURCE IP ADDRESS = 172, 16, 2, 1	DESTINATION IP ADDRESS = 172.16.6.20	PE = 0D CODE (ALWAYS 0)	IDENTIFIER = DEAE	ORIGINATE TIMESTAMP = 19:03:41:347	(RECEIVE TIMESTAMP)	(TRANSMIT TIMESTAMP)
VERSION HEADER					I CMP TYPE =				

FIG.28C

PACKET LENGTH	FLAG FRAGMENT OFFSET	HEADER CHECKSUM	172. 16. 2. 1	SS = 172. 16. 6. 20	CHECKSÙM	SEQUENCE NUMBER = 0000	AP = 19:03:41:347	IMESTAMP)	IMESTAMP)
VERSION HEADER LENGTH BEST EFFORT	IDENTIFICATION	TIL PROTOCOL TYPE = 01	SOURCE 1P ADDRESS = 172, 16, 2, 1	DESTINATION IP ADDRESS = 172.16.6.20	1CMP TYPE = 0D $CODE (ALWAYS 0)$	VTIFIER =	ORIGINATE TIMESTAMP = 19:03:41:347	(RECEIVE TIMESTAMP)	(TRANSMIT TIMESTAMP)

FIG.29A

DESTINATION	HOST/NET	NEXT HOP	OUTPUT PORT	NEXT HOP OUTPUT PORT SERVICE CLASS APPROPRIATE ROUTE	MOST APPROPRIATE ROUTE
172.16.1.0/24	NET	172. 16. 2. 1	-	I	*
172, 16, 2, 0/24	NET	1:	-	ı	*
172. 16. 3. 0/24	NET	ı	2	8Hd-43	
				AF-PHB	
				BEST EFFORT	
172, 16, 5, 0/24	NET	172, 16, 3, 2	2	SHG-73	
				AF-PHB	
	-			BEST EFFORT	
172. 16. 6. 0/24	NET	172, 16, 3, 2	2	EF-PHB	
				AF-PHB	
				BEST EFFORT	

FIG.29B

DESTINATION	HOST/NET	NEXT HOP	OUTPUT PORT	NEXT HOP OUTPUT PORT SERVICE CLASS APPROPRIATE ROUTE	MOST APPROPRIATE ROUTE
172, 16, 1, 0/24	NET	172. 16. 3. 1	-	EF-PHB AF-PHR	
				BEST EFFORT	
172, 16, 2, 0/24	NET	172, 16, 3, 1	-	EF-PHB	
				AF-PHB	
				BEST EFFORT	
172, 16, 3, 0/24	NET		-	SHG-43	
				AF-PHB	
				BEST EFFORT	
172, 16, 5, 0/24			2	i	*
172, 16, 6, 0/24	NET	172, 16, 5, 1	2	-	*

FIG.29C

MOST APPROPRIATE ROUTE									*	*
OUTPUT PORT SERVICE CLASS APPROPRIATE ROUTE	EF-PHB AF-PHB	BEST EFFORT	EF-PHB	AF-PHB	BEST EFFORT	EF-PHB	AF-PHB	BEST EFFORT		
OUTPUT PORT			_						1	2
NEXT HOP	172, 16, 5, 2		172.16.5.2			172, 16, 5, 2			_	1
HOST/NET	NET		NET			NET			NET	HOST
DESTINATION	172. 16. 1. 0/24		172, 16, 2, 0/24			172, 16, 3, 0/24			172. 16. 5. 0/24	172, 16, 6, 20

FIG.30A

PACKET LENGTH	FLAG FRAGMENT OFFSET	HEADER CHECKSUM		(ESS = 172.16.2.1	CHECKSUM	SEQUENCE NUMBER = 0000	ORIGINATE TIMESTAMP = $19:03:41:347$	RECEIVE TIMESTAMP = 19:04:01:241	TRANSMIT TIMESTAMP = 19:04:01:583
VERSION HEADER LENGTH TOS	IDENTIFICATION	TTL PR0T0C0L TYPE = 01	SOURCE 1P ADDRESS = 172. 16. 20	DESTINATION IP ADDRESS = 172, 16, 2, 1	CMP TYPE = 0E CODE (ALWAYS 0)	IDENTIFIER = DEAD	ORIGINATE TIMEST	RECEIVE TIMESTAM	TRANSMIT TIMESTA

FIG.30B

VALUE FOR FEE AS FIRST PRIORITY	20.8	30.5	18.7
VALUE FOR SPEED AS FIRST PRIORITY	32. 4	28. 2	39. 4
FEE INFORMATION	20	10	-
MESSAGE-PACKET RETURN PERIOD	00:00:19:894	00:00:28:183	00:00:58:564
SERVICE CLASS	EF-PHB	AF-PHB	BEST EFFORT
DESTINATION	172, 16, 6, 20		

FIG.30C

	,											
ROPRIATE UTE	FEE	*	*									*
MOST APP RO	SPEED	*	*					*				
OUTPUT PORT SERVICE CLASS MOST APPROPRIATE ROUTE		1	1	8HJ-J3	AF-PHB	BEST EFFORT	SH4-73	AF-PHB	BEST EFFORT1	8Hd-33	AF-PHB	BEST EFFORT1
OUTPUT PORT		l	2	2			2			2		
NEXT HOP		t	1	172. 16. 2. 2			172, 16, 2, 2			172, 16, 2, 2		,
HOST/NET		HOST	NET	NET			NET			NET		
DESTINATION		172. 16. 1. 10	172, 16, 2, 0/24	172. 16. 3. 0/24			172, 16, 5, 0/24			172, 16, 6, 0/24		